

WHAT WE CLAIM ARE:

1. A link mechanism to determine the position and the direction,
comprising:

an axial rod; and

two spherical bearings to support the said axial rod, said two
spherical bearings being capable of changing positions,

wherein the motion of one of said two spherical bearings
relative to said axial rod along the axis is constrained, and the other of said
spherical bearings can travel along said axial rod.

2. A link mechanism to determine the position and the direction
according to claim 1, wherein the position and direction of said axial rod
are determined by defining the coordinate value of the one of said two
spherical bearings and the position of the other of said two spherical
bearings relative to the one of said two spherical bearings.

3. A link mechanism to determine the position and direction according to
claim 1 or 2, wherein the link mechanism is a part of robot arm, in
particular, the end effector.

4. A link mechanism to determine the position and the direction,
comprising:

an axial rod; and

two supports to support said axial rod, said two supports
being capable of changing positions,

wherein the motion of one of said two supports relative to
said axial rod along the axis is constrained, and the other of said supports

can travel along said axial rod.

5. A link mechanism to determine the position and the direction according to claim 4, wherein the position and direction of said axial rod are determined by defining the coordinate value of the one of said two supports and the position of the other of said two supports relative to the one of said two supports.

6. A link mechanism to determine the position and the direction according to claim 4 or 5, wherein the link mechanism is a part of robot arm, in particular, the end effector.